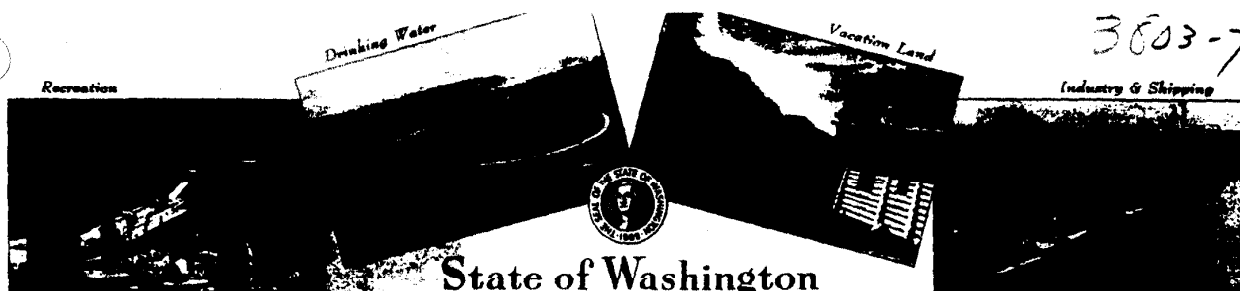


00036 000008

3603-7



State of Washington

Pollution Control Commission

MON C. WALLGREN
GOVERNOR

ADMINISTRATION BUILDING OLYMPIA, WASHINGTON

JACK TAYLOR
DIRECTOR

August 13, 1948

Hooker Electrochemical Company
Tacoma 1,
Washington

Attention: Mr. William A. Ferrin

Subject: Proposed Disposal of Lime in the Hylebos Waterway

Gentlemen:

am
In accordance with the Rules and Regulations of the Pollution Control Commission, we have reviewed the report on the proposed disposal of lime in the Hylebos Waterway and it is hereby approved on the basis of a planned dilution prism.

If possible prism should be increased to reduce pH or control ppm $\text{Ca}(\text{OH})_2$ as closely as possible within the range of 10.

Very truly yours

Jack Taylor
JACK TAYLOR, Director

JT:emr

cc: Dept. of Health
Dept. of Fisheries
Dr. Fasten

OXY 065484

HOOKER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

August 9, 1946

Mr Jack Taylor, Director
State Pollution Control Commission
Legislative Building
Olympia, Washington

Dear Mr Taylor:

We now have under construction on our property located on Hylebos Waterway, Tacoma, Washington, a plant for the chlorination of acetylene which is scheduled to be put into operation about the 1st of December, this year. The operation will include generation of acetylene from calcium carbide and as a result we will obtain 14,000 pounds of carbide sludge per day. This carbide sludge consists of calcium hydroxide, (hydrated lime) and our immediate problem will be to dispose of this material until such time as a commercial outlet for it can be developed. A method for disposing of this material is presented in Mr A W Green's Report "Temporary Disposal of Lime in Hylebos Waterway", copy of which is attached.

You will note from Mr Green's report that it is his conclusion that the lime residue may be discharged into the waterway without detriment to public health or fish life. We have discussed this report and the entire problem with both Mr Johnson and Dr Yastem.

We are making an extensive survey of possible market for hydrated lime in this vicinity, contacting paper mills, agricultural agents and sewage disposal plants. We are also studying and developing methods for recovery of this material for commercial use.

We hereby request permission to discharge the carbide sludge into Hylebos Waterway as outlined in A W Green's report, until such time as we can develop an economical commercial outlet for this material.

Yours very truly,

HOOKER ELECTROCHEMICAL COMPANY

W. A. Ferrin
Wm. A Ferrin
Assistant Treasurer

TH:er
cc State Dept of Health
State Dept. of Fisheries
Dr Yastem

00036 000013

OXY 065488

HOOKEE ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

REPORT
on the
TEMPORARY
PROPOSED DISPOSAL OF LINE
in the
HYLEBOE WATERWAY

HOOKEE ELECTROCHEMICAL COMPANY
June 11, 1946

HOOVER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

-1-

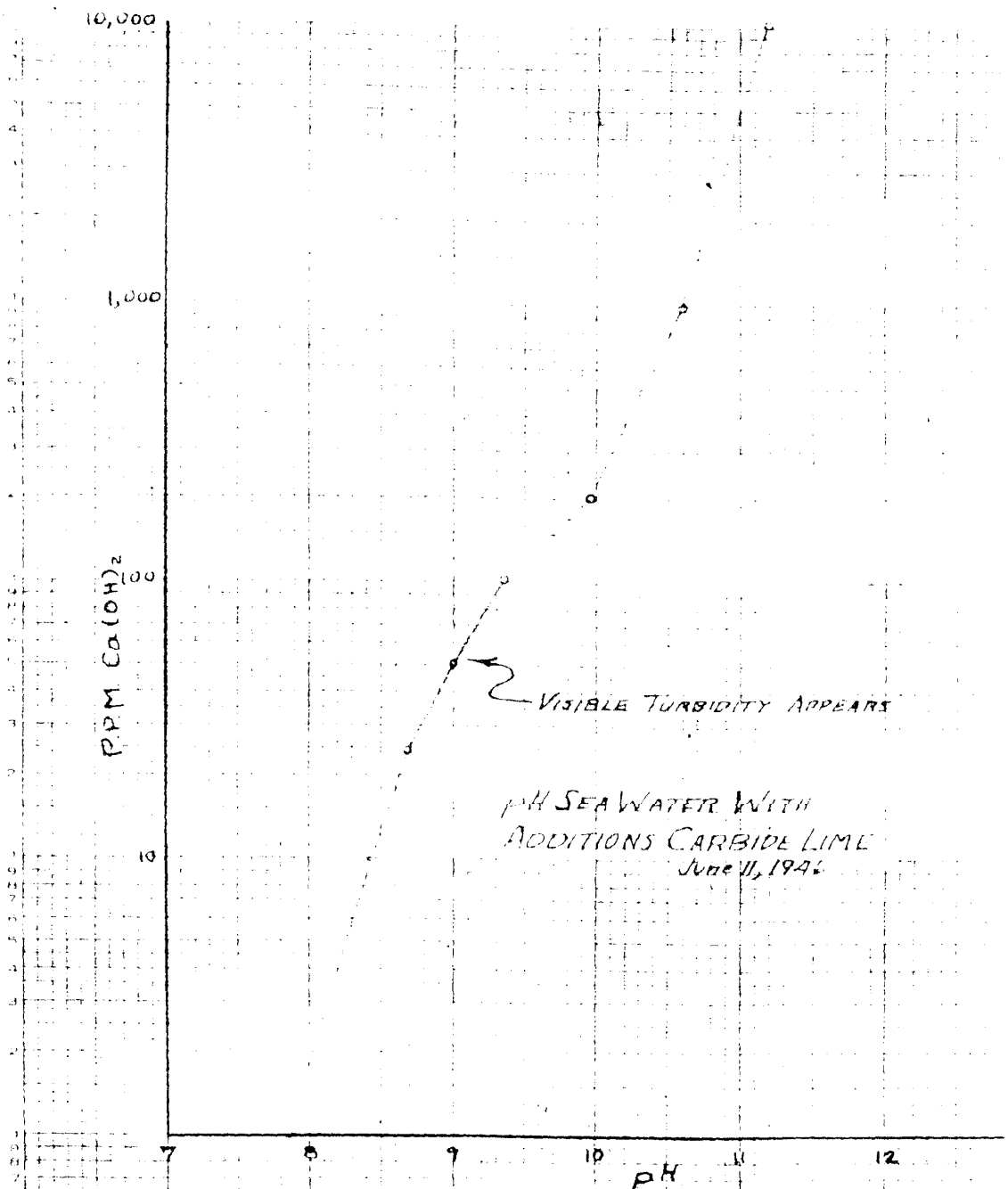
PROBLEM

To determine the feasibility of disposing of certain industrial wastes (Mainly lime) in the Nylebes Waterway, by means of prediluting with a temporary multiple opening outfall.

DATA GATHERED:

1. Mean lower-low tide area of Nylebes waterway upstream from the Hoover Electrochemical Plant is some 104,000,000 sq. ft.
2. The mean tidal range at Seattle is 11.6 (Metcalf & Eddy)
3. The cross-sectional area of the waterway at mean tide is 16,000 sq. ft. at the proposed outfall site (U.S.E.D. Soundings Nov. 1945)
4. Reports from the Frost O-Lite Company indicate that little difficulty has been encountered where they have resorted to disposal of lime wastes in a salt water body (see attached copy of excerpts from correspondence.)
- 5a. Current velocities at point of outfall have been observed at 15', 8', 5' down to 0 @ 3' depths. (Feet per min.)
- b. Surface wind currents no doubt exceed these values at times.
- c. There appear to be unstable eddies in the vicinity of the outfall which effect greater dilutions ultimately.
6. The effect of various concentrations of Ca(OH)_2 on the pH of sea water is shown by the curve plotted on the following sheets. At a concentration of 50 ppm the pH had only been raised to 9.0 from 7.89 of sea water.
7. The turbidity threshold at which the effects of lime would be noticeable is in the neighborhood of some 100 ppm Ca(OH)_2 .
8. Turbidities are due to the precipitation of Magnesium Hydroxide in the sea water.
9. The precipitated Mg(OH)_2 seems to readily redissolve on further dilution below 100 ppm and is slightly discernible at 50 ppm Ca(OH)_2 concentration (pH of 9.0).

CONFIDENTIAL



HOOKE ELECTROCHEMICAL CO.
TACOMA, WASH.

SK 266 6-14-46

Judy Green Johnson

OXY 065491

HOOVER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

-2-

DATA GATHERED (Cont'd)

10. Attached is a quantitative flow sheet showing quantities and materials involved as well as approximate special relationships of the elements of the problem.

DISCUSSION

1. Disposal by means of predilution with all the cooling water available providing a surge tank to even up the flow of lime, would produce concentrations in the outfall of

$$\frac{X}{1,000,000} = \text{lb/cooling water/min} - \text{process water}$$

$$X = \frac{12,000,000}{1500 \times 2.5 - 1650} = \frac{12,000,000}{11500} = 830 \text{ ppm Ca(OH)}_2$$

2. A study of the cross-section of the Nylebes Waterway at the site of the proposed outfall indicates that a plane of at least 1000 sq. ft. might be used for dilution purposes. See attached cross section of the Nylebes.
3. Assuming an average velocity of 1.5' per minute thru this dilution plane, the pounds of sea water available for further dilution in the waterway would be

$$1.5' \text{ min.} \times 1000 \text{ sq. ft.} = 1500 \text{ cu ft/min.}$$

4. Therefore the final concentration in the general vicinity of the outfall would be

$$\frac{\text{lb Ca(OH)}_2 / \text{min} \times 1,000,000}{\text{lb cooling H}_2\text{O} - \text{lb Process water} + \text{lb sea water}} = \text{ppm conc. Ca(OH)}_2$$

$$\frac{12 \times 1,000,000}{12,750 - 1650 - 96,000} = 12,000,000 = 110 \text{ ppm Ca(OH)}_2$$

HOOVER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

-3-

CONCLUSIONS:

It is believed that by utilizing the excess available cooling and process water for dilution water and the proper design of outfall the temporary disposal of the lime residue may be effected economically without detriment to public health, fish life or creating more than a slight turbidity local to proposed outfall.

A. W. Green

atts.
ANG:er

HOOVER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

-4-

COMMENTS ON LIME DISPOSAL

From Report of:

D E Springer's Trip to Prest O-Lite--Indianapolis, Ind.
April 12, 1946

"When questioned about disposal of the lime, Ness said that he would dump it into the bay. Several Prest O-Lite plants are doing this including one in Brooklyn. The only affect was a slight clearing of the water.

Letter of Mr Ness, Superintendent Acetylene Research Division, Prest O-Lite Co., Inc., to Mr Springer of Hecker Co.

"I have checked with our people in New York and find that at any of our plant locations we would not discharge carbide residue into any waterway without permissionin general, however, we have been quite successful in disposing of carbide residues in adjoining waterways, but the situation is decidedly dependant on local conditions.

OXY 065494

THESE ARE THE SPECIFICATIONS
FOR THE DESIGN AND CONSTRUCTION
OF THE SYSTEMS AND THE
MATERIALS TO BE USED IN THE
SYSTEMS.

THESE ARE THE SPECIFICATIONS
FOR THE DESIGN AND CONSTRUCTION
OF THE SYSTEMS AND THE
MATERIALS TO BE USED IN THE
SYSTEMS.



THESE ARE THE SPECIFICATIONS
FOR THE DESIGN AND CONSTRUCTION
OF THE SYSTEMS AND THE
MATERIALS TO BE USED IN THE
SYSTEMS.

HOOKER ELECTROCHEMICAL CO
KODIAK, ALASKA

CHS NO. 1000
W O NO. 1000
CP. 1000
DWS. 1000

DESIGNED TEMPORARY

45 ft
Blug

20
10
0
-10
-20
-30

30' Head Line

Assumed
Elevation Prism
(1500 sq ft in wet plane)

Pier Head Line



100

Mean High Tide

Mean Lower Low Tide

CROSS-SECTION OF HYLEBOS WA
AT
PROPOSED TEMPORARY OIL
HOOKER ELECTROCHEMICAL CO.
TACOMA, WASH.

PMAY

ALL

NY



= 100 sq ft

400

500

OXY 065495

Cross Section at
Hylebos Waterway
at Trichter Point

6-1-46 AWG SK 267

590

PREPARE IN DUPLICATE. Forward Original to Olympia.

TAB -13B

FOR OFFICE USE SITE 57 PERM.

POLLUTION CONTROL COMMISSION
STATE OF WASHINGTON

Application is hereby made for a permit to discharge wastes into the State waters in accordance with Chapter 71, Laws of 1955.

Name of Company Hooker-Detrex, IncorporatedAddress 605 Alexander Avenue City Tacoma, WashingtonName of Receiving Waterway Hylebos Waterway

Water Supply:	Source	Av. Gal./Day	Max. Gal./Day	Treatment
Drinking	<u>City of Tacoma</u>	<u>150</u>	<u>150</u>	<u>None</u>
Industrial	<u>City of Tacoma</u>	<u>62,000</u>	<u>95,000</u>	<u>None</u>
Cooling	<u>City of Tacoma</u>	<u>650,000</u>	<u>850,000</u>	<u>None</u>
	<u>Hylebos Waterway</u>	<u>180,000</u>	<u>230,000</u>	<u>Screened</u>
	<u>(Sea Water)</u>			
Plant Operation:	Days/Year	Number of Employees per Shift		
		Days	Swing	Night
Average	<u>365</u>	<u>12</u>	<u>4</u>	<u>4</u>
Maximum	<u>365</u>	<u>12</u>	<u>4</u>	<u>4</u>

Production: List on the reverse side of this sheet the products manufactured, giving the quantity produced per day, and the days of operation per year for each.

What is the maximum volume of waste water to be discharged?

Cooling water 1,080,000 gal/day. Contaminated water 100,000 gal/day.

Give an analysis of the waste water to be discharged, including the pH and temperature; also, list the maximum quantity, in p.p.m., of each contaminate in this waste water.

	Average Flow	pH	Temp °C	Contaminate
8" Outfall	<u>125 GPM</u>	<u>7.9</u>	<u>20°C</u>	<u>Seawater</u>
24" Outfall	<u>450 GPM</u>	<u>8.5</u>	<u>23°C</u>	<u>Trace of lime</u>
Lime Barge Over-flow	<u>45 GPM</u>	<u>11.7</u>	<u>60°C</u>	<u>7% Calcium Chloride</u>

What waste recovery and treatment facilities do you have?

See attached sheet

What waste recovery and treatment facilities do you plan to install?

See attached sheetSanitary Sewage: Treatment Septic Tanks Disposal Periodic removal to city sewage treatment.

Remarks: (Give any additional pertinent details, and describe your operations briefly.)

See attached sheet

* p.p.m. = parts per million.

OXY 071251

Signed John W. [Signature] Title Technical Supt. Date April 3, 1956
INFORMATION FURNISHED ON THIS FORM WILL BE TREATED AS CONFIDENTIAL.

HOOKER-DETXEX INCORPORATED
TACOMA 1, WASHINGTON

What waste recovery and treatment facilities do you have?

The principle waste from Hooker-Detrex, Incorporated averages approximately 70,000 gallons per day of carbide lime sludge in slurry form containing 18 tons per day calcium hydroxide, 16 tons per day of dissolved calcium chloride, and 288 tons per day water (approx. 90 GPM total flow).

This waste is pumped to a leased barge designed to settle the lime sludge and decant the clear calcium chloride liquor. When the barge is filled with solids it is towed to a deep water area of Commencement Bay and dumped. The process slurry flow is retained in shore tanks during the barge's absence.

What waste recovery and treatment facilities do you plan to install?

Negotiations are now in progress to sell approximately 60% of the above lime sludge to Reynolds Metals Company, Longview, Washington. It may be possible to dispose of the remaining sludge and calcium chloride liquor to another concern. This project is being investigated.

Remarks:

Hooker-Detrex, Incorporated manufactures trichlorethylene from acetylene and chlorine. Acetylene is produced by reacting calcium carbide with water. This operation is the source of the waste carbide lime sludge.

OXY 071252

PREPARE IN DUPLICATE. Forward Original to Olympia.

POLLUTION CONTROL COMMISSION
STATE OF WASHINGTON

Application is hereby made for a permit to discharge wastes into the State waters in accordance with Chapter 71, Laws of 1955.

Name of Company Hooker Electrochemical Company

Address 605 Alexander Avenue City Tacoma, Washington

Name of Receiving Waterway Hylebos Waterway

FOR OFFICE USE ONLY

Type.....
 Permit No.....
 Date Rec'd.....
 Date issued.....
 Date expires.....

Water Supply:	Source	Av. Gal./Day	Max. Gal./Day	Treatment
Drinking	<u>City of Tacoma</u>	<u>8700</u>	<u>8700</u>	<u>None</u>
Industrial	<u>City of Tacoma</u>	<u>125,000</u>	<u>150,000</u>	<u>None</u>
Cooling	<u>City of Tacoma</u>	<u>2,640,000</u>	<u>3,250,000</u>	<u>None</u>
	<u>Hylebos Waterway</u>	<u>12,000,000</u>	<u>15,000,000</u>	<u>Screened</u>
	<u>(Sea Water)</u>			

Plant Operation: Days/Year 365 Number of Employees per Shift

	Days	Swing	Night
Average	<u>365</u>	<u>211</u>	<u>20</u>
Maximum	<u>365</u>	<u>221</u>	<u>20</u>

Production: List on the reverse side of this sheet the products manufactured, giving the quantity produced per day, and the days of operation per year for each.

See attached sheet.

What is the maximum volume of waste water to be discharged?

Cooling water 18,000,000 gal/day. Contaminated water 250,000 gal/da.

Give an analysis of the waste water to be discharged, including the pH and temperature; also, list the maximum quantity, in p.p.m.*, of each contaminate in this waste water.

Outfall	Average Flow	pH	Temp °C	Contaminant
Chlorine Department	2500 GPM	7.5 - 8.6	25 °C	Sea water and trace of NaCl
Caustic Department	7000 GPM	7.0 - 8.6	30 °C	Sea water and trace of NaOH
Boiler House	30 GPM	9.0 - 10.5	70 °C	NaOH
Brine Department	120 GPM	10.0 - 11.0	20 °C	NaOH
Ammonia Department	300 GPM	9.0 - 11.5	27 °C	NaOH

OH Plant Surface drainage
 What waste recovery and treatment facilities do you have?

See attached sheet

What waste recovery and treatment facilities do you plan to install?

See attached sheet

Sanitary Sewage: Treatment Septic Tanks Disposal Periodic transfer to sewage treatment plant.

Remarks: (Give any additional pertinent details, and describe your operations briefly.)

See attached sheet

* p.p.m. = parts per million.

OXY 071253

Signed Julian Jude Title Technical Supt. Date April 6, 1956
 INFORMATION FURNISHED ON THIS FORM WILL BE TREATED AS CONFIDENTIAL.

HOOKER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

Production

Sodium Hydroxide	400 Tons/Day	365 Days/Year
Liquid Chlorine	355 Tons/Day	365 Days/Year
Muriatic Acid	10 Tons/Day	Intermittent Production
Anhydrous Ammonia	60 Tons/Day	365 Days/Year
TRICHLOROETHYLENE	40 T/D	365 D/Yr.

What waste recovery and treatment facilities do you have?

1. Wastes which are high in chlorine content are processed through a stripping tower before severing.
2. High acid effluent, a waste from chlorine drying, is mixed with alkaline Caustic Department effluent prior to the outfall into Hylebos Waterway.
3. *Ammonia Vent gases are Burned.*

What waste recovery and treatment facilities do you plan to install?

We are now engineering a collection sump and usage system for weak caustic solutions now sewerred into the Ammonia Plant outfall. This will greatly reduce the alkalinity of this outfall.

A study is also being made of methods to reduce the alkalinity of the Brine Department and Boiler House outfalls.

Remarks:

Hooker Electrochemical Company is engaged in the manufacture of chlorine and caustic soda by the electrolysis of saturated brine solution. By-product hydrogen from this process is reacted with nitrogen obtained from the air and converted to anhydrous ammonia.

DCC36 000041

May 11, 1956

Mr Alfred T Neale
Associate Engineer
Pollution Control Commission
403 Old Capitol Building
Olympia, Washington

Dear Mr Neale:

Hooker Electrochemical Company and Hooker-Detrex, Inc
Waste Discharge Permit Applications

As requested in your letter of April 16 we have determined the average and maximum parts per million of each contaminant in each of the outfalls from Hooker Electrochemical Company and Hooker-Detrex, Inc. This information along with that previously furnished concerning flow rates and temperatures is tabulated on the attached sheets. The information concerning the Hooker-Detrex, Inc. carbide lime disposal was included in the permit application for this plant but is repeated for your convenience.

As to the status of the Hooker-Detrex carbide lime sludge utilization project, Reynolds Metals Company has contracted 11.5 tons per day of this material. Shipment from our plant should commence sometime this summer. Reichhold Chemicals, Inc. may purchase four or more tons per day of the remaining sludge. This outlet is not firm as yet, however.

Let us know if you need additional information.

Yours very truly,

HOOKER ELECTROCHEMICAL COMPANY

John Judy
Technical Superintendent

HWB:jw

bcc: GG
AJR
RMS
HWB
LJ

Hooker Electrochemical Company Waste Discharges

Outfall	Avg Flow	pH	Temp °C	Contaminant	Avg ppm	Max ppm
Chlorine Dept (1)	2500 GPM	7.5-8.6	25°C	NaOH Avail. Cl ₂	24 0	88 0
Caustic Dept (1)	7000	7.0-8.6	30°C	NaOH Avail. Cl ₂	32 0	236 0
Boiler House	30	9.0-10.5	70°C	NaOH NaCl Na ₂ PO ₄	32 120 3	88 234 4
Brine Dept (2)	120	10.0-11.0	20°C	NaOH NaCl Avail. Cl ₂	129 4417 1.74	309 8775 4
Ammonia Dept (3)	300	9.0-11.5	27°C	NaOH NaCl	702 4997	5330 8775
OH Plant (4)	2	8.7-12.4		NH ₄ OH	15060	57230

- (1) These outfalls are principally sea water used for cooling.
- (2) About once a week it is necessary to wash sludge out of some one of our brine tanks, salt storage tanks or salt settling storage tanks. This is done through this brine sewer at high tides to give the maximum dispersal. In addition to the contaminants shown, these sludges contain CaCO₃, MgOH, and dirt. We are studying the possibility of washing this sludge into a holding tank and then pumping it at a slow rate into our 7,000 gpm caustic sewer.
- (3) See original permit application concerning planned treatment facilities.
- (4) At the time of application permit this outfall was reported as surface drainage. Since that date, it has become necessary to absorb a small quantity of ammonia vent gas in water for sewerage.

Hooker-Detrex, Inc Waste Discharges

Outfall	Avg Flow	pH	Temp °C	Contaminant	Avg ppm	Max ppm
8"	125 GPM	7.9	20 °C	Ca(OH) ₂	62	121
24"	450 GPM	8.5	25 °C	Ca(OH) ₂	15	44
Line Barge Overflow	40 GPM	11.7	60 °C ✓	Ca(OH) ₂ CaCl ₂	1425 47000	1520 65000

The principal waste from Hooker-Detrex, Inc averages approximately 70,000 gallons per day of carbide lime sludge in slurry form containing 18 tons per day calcium hydroxide, 16 tons per day of dissolved calcium chloride, and 288 tons per day of water.

This waste is pumped to a leased barge designed to settle the lime sludge and decant the clear calcium chloride liquor. When the barge is filled with solids, it is towed to a deep water area of Commencement Bay and dumped. The process slurry flow is retained in shore tanks during the barge's absence.

The lime sludge in the barge is in the form of a 30% solids slurry. A barge when full holds approximately 144 tons of carbide lime sludge and 24 tons of calcium chloride as a 7 to 8% water solution. A barge is dumped an average of every eight days of plant operation.

PREPARE IN DUPLICATE. Forward Original to Olympia.

POLLUTION CONTROL COMMISSION
STATE OF WASHINGTON

Application is hereby made for a permit to discharge wastes into the State waters in accordance with Chapter 71, Laws of 1955.

Name of Company Hooker Electrochemical Company

Address 605 Alexander Avenue

City Tacoma, Washington

Name of Receiving Waterway Nisabos Waterway

Water Supply	Source	Avg. Gal./Day	Max. Gal./Day	Treatment
Drinking	<u>City of Tacoma</u>	<u>8700</u>	<u>8700</u>	<u>None</u>
Industrial	<u>City of Tacoma</u>	<u>125,000</u>	<u>150,000</u>	<u>None</u>
Cooling	<u>City of Tacoma</u>	<u>2,640,000</u>	<u>3,250,000</u>	<u>None</u>
	<u>Nisabos Waterway</u>	<u>12,000,000</u>	<u>15,000,000</u>	<u>Surgeoned</u>

Plant Operation: Days/year

Number of Employees per Shift

	Average	Maximum	Days	Swing	Night
	<u>35</u>	<u>35</u>	<u>21</u>	<u>20</u>	<u>20</u>
			<u>22</u>	<u>20</u>	<u>20</u>

Production: List on the reverse side of this sheet the products manufactured, giving the quantity produced per day, and the days of operation per year for each.

See attached sheet.

What is the maximum volume of waste water to be discharged?

Cooling water 12,000,000 gal/day Contaminated water 250,000 gal/day

Give an analysis of the waste water to be discharged, including the pH and temperature. List the maximum quantity in p.p.m. for each contaminant.

Source	Average Flow	pH	Temp °C	Contaminant
Chlorine Department	2500 GPM	7.5 - 8.6	25°C	Sea water and trace of NaOH
Caustic Department	7000 GPM	7.5 - 8.6	30°C	Sea water and trace of NaOH
Boiler House	30 GPM	9.0 - 10.5	70°C	NaOH
Brine Department	120 GPM	10.0 - 11.0	20°C	NaOH
Ammonia Department	300 GPM	9.5 - 11.5	27°C	NaOH

See attached sheet.

What waste recovery and treatment facilities do you have?

See attached sheet.

What waste recovery and treatment facilities do you plan to install?

See attached sheet.

Sanitary sewage: Treatment Septic tanks Disposal Periodic transfer to sewage treatment plant.

Remarks: (Give any additional pertinent details, and describe your operations briefly.)

See attached sheet.

p.p.m. - parts per million.

OXY 003482

Signed [Signature] Date April 6, 1956

INFORMATION FURNISHED ON THIS FORM WILL BE TREATED AS CONFIDENTIAL.

HOOKER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

Production

Sodium Hydroxide	400 Tons/Day	365 Days/Year
Liquid Chlorine	375 Tons/Day	365 Days/Year
Muriatic Acid	10 Tons/Day	Intermittent Production
Anhydrous Ammonia	60 Tons/Day	365 Days/Year

What waste recovery and treatment facilities do you have?

1. Wastes which are high in chlorine content are processed through a stripping tower before sewerage.
2. High acid effluent, a waste from chlorine drying, is mixed with alkaline Caustic Department effluent prior to the outfall into Hylebos Waterway.

What waste recovery and treatment facilities do you plan to install?

We are now engineering a collection pump and sewage system for weak caustic solutions now sewered into the ammonia plant outfall. This will greatly reduce the alkalinity of this outfall.

A study is also being made of methods to reduce the alkalinity of the Brine Department and Boiler House outfalls.

Remarks:

Hooker Electrochemical Company is engaged in the manufacture of chlorine and caustic soda by the electrolysis of saturated brine solution. By-product hydrogen from this process is reacted with nitrogen obtained from the air and converted to anhydrous ammonia.

OXY 003483

RMS

Eng. File

May 11, 1956

Mr Alfred T Neale
Associate Engineer
Pollution Control Commission
408 Old Capitol Building
Olympia, Washington

Dear Mr Neale:

Hooker Electrochemical Company and Hooker-Detrex, Inc
Waste Discharge Permit Applications

As requested in your letter of April 16 we have determined the average and maximum parts per million of each contaminant in each of the outfalls from Hooker Electrochemical Company and Hooker-Detrex, Inc. This information along with that previously furnished concerning flow rates and temperatures is tabulated on the attached sheets. The information concerning the Hooker-Detrex, Inc. carbide line disposal was included in the permit application for this plant but is repeated for your convenience.

As to the status of the Hooker-Detrex carbide line sludge utilization project, Reynolds Metals Company has contracted 11.7 tons per day of this material. Shipment from our plant should commence sometime this summer. Reichhold Chemicals, Inc. may purchase four or more tons per day of the remaining sludge. This outlet is not firm as yet, however.

Let us know if you need additional information.

Yours very truly,

HOOKER ELECTROCHEMICAL COMPANY

J

John Judy
Technical Superintendent

RMS:jw

cc: CG
AJR
RMS
RMS
LF

Rml
5/14

OXY 003444

Hooker Electrochemical Company Waste Discharges

Outfall	Avg Flow	pH	Temp °C	Contaminant	Avg ppm	Max ppm
Chlorine Dept (1)	2500 GPM	7.5-8.6	25 °C	NaOH Avail. Cl ₂	24 0	88 0
Caustic Dept (1)	7000	7.0-8.6	30 °C	NaOH Avail. Cl ₂	52 0	236 0
Boiler House	30	9.0-10.5	70 °C	NaOH NaCl Na ₂ PO ₄	52 120 3	88 234 4
Brine Dept (2)	120	10.0-11.0	20 °C	NaOH NaCl Avail. Cl ₂	129 4417 1.74	309 8775 4
Ammonia Dept (3)	300	9.0-11.5	27 °C	NaOH NaCl	702 4397	3330 8775
OH Plant (4)	2	8.7-12.4		NH ₄ OH	15060	37230

- (1) These outfalls are principally sea water used for cooling.
- (2) About once a week it is necessary to wash sludge out of some one of our brine tanks, salt storage tanks or salt settling storage tanks. This is done through this brine sewer at high tides to give the maximum dispersal. In addition to the contaminants shown, these sludges contain CaCO₃, MgOH, and dirt. We are studying the possibility of washing this sludge into a holding tank and then pumping it at a slow rate into our 7,000 gpm caustic sewer.
- (3) See original permit application concerning planned treatment facilities.
- (4) At the time of application permit this outfall was reported as surface drainage. Since that date, it has become necessary to absorb a small quantity of ammonia vent gas in water for sewerage.

Hooker-Detrex, Inc Waste Discharges

Outfall	Avg Flow	pH	Temp °C	Contaminant	Avg ppm	Max ppm
8"	125 GPM	7.9	20 °C	Ca(OH) ₂	62	121
24"	450 GPM	8.5	23 °C	Ca(OH) ₂	13	44
Lime Barge Overflow	40 GPM	11.7	60 °C	Ca(OH) ₂ CaCl ₂	1425 47000	1520 65000

The principal waste from Hooker-Detrex, Inc averages approximately 70,000 gallons per day of carbide lime sludge in slurry form containing 18 tons per day calcium hydroxide, 15 tons per day of dissolved calcium chloride, and 283 tons per day of water.

This waste is pumped to a leased barge designed to settle the lime sludge and decant the clear calcium chloride liquor. When the barge is filled with solids, it is towed to a deep water area of Commencement Bay and dumped. The process slurry flow is retained in shore tanks during the barge's absence.

The lime sludge in the barge is in the form of a 30% solids slurry. A barge when full holds approximately 144 tons of carbide lime sludge and 24 tons of calcium chloride as a 7 to 8% water solution. A barge is dumped an average of every eight days of plant operation.

HOOKER ELECTROCHEMICAL COMPANY
TACOMA, WASHINGTON

July 15, 1976

George Santen
Works Manager

Plant Water Pollution Control

On Tuesday morning, July 17, Alfred Seale and Ben Jones of the Pollution Control Commission visited our plant. They inspected our sewer outfalls and discussed the steps we will be required to take to receive a permanent permit.

Within a few days they will send us a temporary permit which will allow us to operate as we are for one year. The temporary permit will stipulate that we are to have plans prepared and submitted to the Commission within six months for an outfall system that will meet the following requirements:

1. Combine outfalls as far as possible. They will allow us a maximum of three.
2. Extend outfalls so that they are submerged at lowest tides.
3. Control effluents so that they meet the minimum requirements of the Commission. The pH range has been set at 5.5 to 8.5 but we may be allowed to go slightly higher. The available chlorine limit has been set at .5 ppm.

Upon approval of our plans we will then be given until July 1977 to complete the installation.

Mr Seale requested that we write the Commission a letter outlining our progress in disposing of our lime sludge. I will write this letter in the next few days. It was also suggested that we discharge the liquid overflow from the lime tanks under water.



John Judy
Technical Superintendent

JG:jw

cc: LAM DED SSM AJM Shift Supt RFB SMT RFW JM WTS LS RFB I-1

CONFIDENTIAL

OXY 065523

STATE OF WASHINGTON
POLLUTION CONTROL COMMISSION
OLYMPIA, WASHINGTON

Permit **T****126**

In accordance with Chapter 71, Laws of 1965,
A WASTE DISCHARGE PERMIT is issued to:

Date of issue August 21, 1967

Date of expiration August 21, 1968

Hooker Electrochemical Company
105 Alexander Avenue
Tacoma, Washington

Waste not to exceed 18,500,000 gallons per day may be discharged to

Hyloboe Waterway

subject to the following conditions:

1. The word "waste" in the above statement refers to the total volume of cooling and contaminated waters to be discharged.
2. Such treatment facilities as have been approved by this Commission shall be continuously and efficiently operated to produce an effluent having a pH between 6.5 and 9.5 and which does not exceed 9.0 under extreme conditions.
3. Plant effluents are to be combined and discharged through continuously submerged outfalls with a maximum of two outfalls from the plant.
4. Overflow from the lime barge is to be discharged through continuously submerged outlets.
5. Prior to the expiration date of this permit, provision is to be made for the recovery, sale or land disposal of a major portion of processing sludge wastes.
6. An analysis of toxic chemical concentrations in the plant effluent is to be submitted each month. High, average and low chemical concentrations are to be indicated.
7. Sanitary wastes are to be disposed of in accordance with the recommendations of the County Health Department.
8. All requirements and ordinances of the County regarding the installation, construction and maintenance of septic tanks are hereby made a condition of this permit.

OXY 065526

This permit does not allow the discharge of wastes other than those mentioned herein. A new application shall be submitted whenever a change in the waste to be discharged is anticipated.

This permit is subject to termination if the Commission finds: (1) That it was procured by misrepresentation of any material fact or by lack of full disclosure in the application; (2) That there has been a violation of the conditions thereof; (3) That a material change in quantity or type of waste disposal exists.

In the event that a material change in the conditions of the state waters utilized creates a dangerous degree of pollution, the Commission may specify additional conditions to this permit.

LJN/cs

Signed: _____
Director, Pollution Control Commission

This permit does not in any way release the permittee from liability for damage to persons or property caused by or resulting from the discharge of waste.